CLAIMS

What is claimed is:

1.   A method of performing reject management within a back-end integrated circuit (IC) device manufacturing process comprising:

5   automatically tracking locations of a die-strip as it traverses through said back-end manufacturing process;

collecting parameter information regarding a plurality of die on said die-strip, said parameter information collected at a plurality of said locations within said back-end manufacturing process;

10   using said parameter information to update a die-strip map database for said die-strip and wherein said die-strip map database comprises a respective entry for each die of said die-strip; and

automatically categorizing individual die of said die-strip based on said die-strip map database.

15

2.   The method as recited in Claim 1 wherein said automatically tracking comprises employing a plurality of vision camera systems deployed at said locations to automatically recognize a unique code on said die-strip which identifies said die-strip.

20

3.   The method as recited in Claim 2 wherein said collecting parameter information comprises using said plurality of vision camera systems to automatically analyze physical attributes of said plurality of die of said die-strip.

5   4.   The method as recited in Claim 1 wherein said collecting parameter information comprises using a tester sub-station to electronically test said plurality of die of said die-strip.

5.   The method as recited in Claim 3 wherein said collecting parameter

10   information further comprises using a tester sub-station to electronically test said plurality of die of said die-strip.

6.   The method as recited in Claim 1 wherein said parameter information comprises processing history information and wherein said die-strip map database

15   further comprises a processing history of said die-strip.

7.   The method as recited in Claim 6 wherein said automatically categorizing comprises evaluating said die-strip processing history to identify die-strip processing errors which occur during said back-end manufacturing process.

20

8. The method as recited in Claim 1 wherein said automatically categorizing comprises assigning a category to dies of said die-strip and wherein said categories comprise: die acceptance; and die rejection.

9. The method as described in Claim 8 wherein said automatically categorizing further comprises automatically separating accepted die from rejected die into different containers.

10. The method as recited in Claim 8 wherein said categories further comprise performance information of said individual die.

11. The method as described in Claim 10 wherein said automatically categorizing further comprises automatically separating die of different performances into different containers.

12. The method as described in Claim 1 wherein said die-strip is of a ball grid array type.

13. The method as described in Claim 1 wherein said back-end manufacturing process comprises a plurality of integrated in-line sub-stations and further comprising traversing said die-strip in an in-line fashion through said plurality of integrated in-line sub-stations.

14.   A method of reject management within a back-end IC manufacturing

process comprising:

automatically traversing a die-strip through a plurality of integrated sub-

stations of said back-end manufacturing process, wherein said traversing is

5   performed in an in-line fashion through said sub-stations and wherein further said

die-strip comprises a plurality of individual die; and

automatically inspecting said die-strip at some of said sub-stations using

vision camera systems; and

automatically updating a memory stored database with results obtained from

10   said inspecting, said database storing information for each die of said die-strip.

15.   The method as recited in Claim 14 further comprising:

automatically inspecting said plurality of individual die of said die-strip at a

tester sub-station of said back-end manufacturing process; and

15   automatically updating said memory stored database with results obtained

from said inspecting of said tester sub-station.

16.   The method as recited in Claim 14 further comprising:

using said vision camera systems to automatically identify a code associated

20   on said die-strip; and

using said code to automatically determine a location of said die-strip within

said plurality of integrated sub-stations.

17.   The method as recited in Claim 16 wherein said memory stored database maintains a processing history of said die-strip.

18.   The method as recited in Claim 16 further comprising automatically categorizing die of said die-strip based on said information of said database.

19.   The method as recited in Claim 16 wherein said information of said database comprises die category assignments for each of said die of said die-strip and wherein said die categories comprise: die acceptance and die rejection.

20.   The method as recited in Claim 19 further comprising automatically sorting said plurality of die of said die-strip into different containers based on their category assignments.

21.   A system for reject management within a back-end IC manufacturing process comprising:

a plurality of integrated sub-stations performing back-end manufacturing processes on a die-strip traversing therethrough;

a plurality of vision camera systems deployed within some of said plurality of integrated sub-stations for automatically identifying a code associated with said die-strip to determine a location of said die-strip and also for automatically examining a plurality of die on said die-strip for physical attributes thereof; and

a computer system coupled to said vision camera systems and comprising a memory for integrating results of said vision camera systems for each die of said die-strip into a database.

5   22.   A system as described in Claim 21 wherein one of said plurality of integrated sub-stations is a tester for performing electronic testing of said plurality of die of said die-strip and wherein results of said tester are integrated with said results of said vision camera systems within said database.

10   23.   A system as described in Claim 22 wherein one of said plurality of integrated sub-stations is a sorting sub-station for sorting said plurality of die into different containers based on information stored said database.

24.   A system as described in Claim 21 wherein said die-strip is of a ball grid array type and wherein said die-strip traverses through said plurality of sub-stations
15 in an in-line fashion.

25.   The system as recited in Claim 21 wherein said database contains a die category assignment for each die of said die-strip and wherein said die categories comprise: die acceptance; and die rejection.
20

26.   The system as recited in Claim 22 wherein said database contains a die

category assignment for each die of said die-strip and wherein said die categories

comprise: die acceptance; die rejection; and die performance.

5   27.   The system as recited in Claim 21 wherein said die-strip code is a 2

dimensional matrix code that is placed on a surface of said die-strip.

28.   A system for reject management within a back-end IC manufacturing

process comprising:

10   a plurality of integrated sub-stations performing back-end manufacturing

processes on a plurality of die-strips traversing therethrough in an in-line fashion;

a plurality of vision camera systems deployed within some of said plurality of

integrated sub-stations for automatically identifying a respective code associated

with each die-strip to determine a location of each die-strip and also for

15   automatically examining a plurality of die on said die-strip for physical attributes

thereof;

a tester sub-station for performing electronic testing of said plurality of die of

said die-strip; and

a computer system coupled to said vision camera systems and coupled to said

20   tester sub-station and comprising a memory for integrating results of said plurality

of vision camera systems and said tester sub-station for each die of said die-strip into

a database.

29.   A system as described in Claim 28 further comprising a sorter substation for using said database to automatically sort said plurality of die into various physical bins.